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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,145	12/20/2001	Ching-Pang Lee	13DV14114	2460

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EXAMINER	
VERDIER, CHRISTOPHER M	
ART UNIT	**PAPER NUMBER**
3745	7

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	10/028,145	LEE ET AL.	
	Examiner	Art Unit	
	Christopher Verdier	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9 and 12* is/are rejected.

7)☒ Claim(s) *10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12-20-01* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Applicants' Amendment dated April 28, 2003 has been carefully considered but is deemed non-persuasive. Claims 1-2 and 4-12 are pending. The specification has been amended so that the objection to the drawings set forth in the first Office action is overcome. The claims have been amended to overcome the objections set forth in the first Office action, and the abstract has been amended to overcome the objection thereto. Correction of the above matters is noted with appreciation.

Applicants have amended independent claim 1 to recite an interface layer disposed between the rib and the outer wall and have argued that Japanese Patent 1-53002 and Jackson 5,626,462 do not disclose this feature. This argument is agreed with.

With regard to Andersen 4,142,824, Applicants have argued that the thin sheet metal sleeve 58 is not a high temperature foil as required by claims 1 and 7, because there is no suggestion that the sleeve is a high temperature foil as defined by the present specification, and that a "high temperature foil" contemplates much more than something simply capable of withstanding high temperatures. Applicants have also pointed to the present specification and note that the foil disclosed therein is made from an alloy with improved strength and oxidation resistance over conventional superalloys at temperatures above 2000 degrees F, capable of being formed to a specific thickness, and have argued that there is nothing in the Andersen patent to suggest that the metal sleeve meets all of these characteristics. These arguments are not persuasive because Patent Office policy is to give claims their broadest reasonable interpretation (*In re Zletz*, 893 F.2d 319, 321, 13USPQ2d 1320, 1322 (Fed. Cir. 1989)) and limitations from a

pending application's specification are not to be read into the clams (*Sjolund v. Musland*, 847 F.2d 1573, 1581-82, 6USPQ2d 2020, 2027 (Fed. Cir. 1989)). Applicant always has the opportunity to amended the claims during prosecution, and broad interpretation by the examiner reduces the possibility that an issued claim will be interpreted more broadly than is justified (*In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969)). See also MPEP 2111. The thin metal foil 58 of Andersen meets the limitation of a "high temperature foil", because as mentioned in the background thereof (column 1, lines 27-33), the temperature of operating fluid is often in excess of 2000 degrees F. Because the foil 58 of Andersen does not melt under these conditions, it would reasonably be considered by one of ordinary skill in the art to be a "high temperature foil".

Applicants' additional arguments with regard to the combinations of Andersen and Chandley, and Andersen and Craig are that Andersen does not disclose a high temperature foil. These arguments are not persuasive for the reasons set forth above.

The indicated allowability of claims 4-5 is withdrawn in view of the newly discovered reference(s) to Lee 6,551,063. It is noted that Applicant has amended claim 4 so that it no longer contains the limitations of intervening claim 2. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Andersen 4,142,824. Note the airfoil 20 having root 16, tip near 46, leading edge 26, trailing edge 28, first wall 44 extending from the leading edge to the trailing edge, second wall 42 extending from the leading edge to the trailing edge, with the second wall 42 having ribs 55 extending therefrom, and outer wall 58 disposed in spaced apart relationship with the second wall 42 and attached to the ribs 55, with the outer wall comprising a high temperature foil. The outer wall is considered to be spaced apart from the second wall interior periphery, due to the presence of slots 54. The outer wall is a high temperature foil because it is inherently capable of withstanding high temperatures that occur in a gas turbine engine. Note suction side tip wall 42 and pressure side tip wall 44. The pressure side tip wall 44 is offset from the pressure side wall 24 to define a tip shelf near 56 extending circumferentially and having at least one rib 55 extending therefrom. The outer tip wall 58 is disposed on the pressure side of the tip in spaced apart relation with the pressure side tip wall 44.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen 4,142,824 in view of Chandley 3,423,069. Andersen discloses an airfoil substantially as claimed as set forth above, including a high temperature foil 58 located in spaced apart relationship with the second wall 42 and attached to the ribs 55, having an interface layer in the form of brazing material disposed between the ribs 55 and the high temperature foil outer wall 58, but does not disclose that the high temperature foil comprises a rhodium-based alloy.

Chandley (figure 2) shows an airfoil 10 for a high temperature gas turbine engine having a shield 28 made of platinum/rhodium alloy, for the purpose of protecting the airfoil by virtue of the platinum/rhodium alloy preventing melting of the leading edge region.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the airfoil of Andersen such that the high temperature foil is of platinum/rhodium alloy, as taught by Chandley, for the purpose of protecting the airfoil by virtue of the platinum/rhodium alloy preventing melting of the airfoil. Although Chandley discloses that the platinum/rhodium alloy shield 28 extends along the leading edge portion, one of ordinary skill in the art would have recognized from the teachings of Chandley that the platinum/rhodium alloy shield is applicable to any portion of the airfoil, including the entirety of the tip periphery.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen 4,142,824 in view of Mizuhara 4,447,391. Andersen discloses an airfoil substantially as claimed as set forth above, including a high temperature foil 58 located in spaced apart relationship with the second wall 42 and attached to the ribs 55, having an interface layer in the form of brazing material disposed between the ribs 55 and the high temperature foil outer wall 58, but does not disclose that the interface layer comprises chromium, palladium, and nickel.

Mizuhara 4,447,391 shows a brazing alloy containing specific amounts of chromium, palladium, and nickel, for the purpose of providing improved corrosion and oxidation resistance in the brazing alloy.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize a brazing alloy of chromium, palladium, and nickel for the interface layer in Andersen, as taught by Mizuhara, for the purpose of providing improved corrosion and oxidation resistance in the brazing alloy.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen and Mizuhara as applied to claim 4 above, and further in view of Lee 5,733,102. The modified airfoil of Andersen shows all of the claimed subject matter including first and second walls 44, 42, respectively, but does not show that the first and second walls are of made of a nickel-base superalloy.

Lee 5,733,102 (figure 1) shows a turbine blade having first and second walls 24, 26, made of a nickel-base superalloy, for the purpose of providing suitable strength at high temperature operation.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified airfoil of Andersen 4,142,824 such that the first and second walls of the airfoil are made of a nickel-base superalloy, as taught by Lee 5,733,102, for the purpose of providing suitable strength at high temperature operation.

Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen 4,142,824 in view of Craig 4,501,053. Andersen 4,142,824 discloses an airfoil substantially as claimed as set forth above including an outer wall 58 in the form of high temperature foils, but does not disclose that the high temperature foil comprises a nickel-based alloy.

Craig 4,501,053 (figures 3 and 5) shows a turbine blade having a shell 34 in the form of a nickel-base alloy (see column 6, lines 5-17), for the purpose of providing the turbine blade with good resistance to corrosion.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the high temperature foil of Andersen of a nickel-base alloy, as taught by Craig, for the purpose of providing good resistance to corrosion.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ormum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 4, and 5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 3, 4, and 5, respectively, of U.S. Patent No. 6,551,063. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application claim an airfoil body having a root and a tip, while the claims of U.S. Patent 6,551,063 claim an airfoil. However, the airfoil recited in the claims of U.S. Patent 6,551,063 inherently would have to include an airfoil body, in order to be considered as an airfoil, and inherently would have to include a root and a tip, because an airfoil has a length, with the root being the base of the airfoil and the tip being the radial extremity of the airfoil. Note that claims 3-5 of the patent "anticipate" application claims 1-2 and 4-5. Accordingly, application claims 3-5 are not patentably distinct from patent claims 1-2 and 4-5. Here, patent claim 3 requires the specific pressure side wall, the specific suction side wall, a specific slot in the pressure side wall, a specific land extending from the pressure side wall to the suction side wall, and an outer wall attached to the land, while application claim 1 only broadly requires a first wall, a second wall, and an outer comprising a high temperature foil wall attached to the rib extending from the second wall (which is analogous to the land recited in claim 3 of U.S. Patent 6,551,063). Thus it is apparent that the more specific patent claims 3-5 encompass application claims 1-2 and 4-5. Following the rationale in *In re Goodman* cited in the preceding paragraph, where applicant has once been granted a patent containing a claim for the specific or narrower invention, applicant may not then obtain a second patent with a claim for the generic or broader invention without first submitting an appropriate terminal

disclaimer. Note that since applications claims 1-2 and 4-5 are anticipated by patent claims 3-5 and since anticipation is the epitome of obviousness, then applications claims 1-2 and 4-5 are obvious over patent claims 3-5.

Claim 6 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent 6,551,503 in view of Craig 4,501,053. The airfoil of claim 3 of U.S. Patent 6,551,053 claims substantially the same subject matter as claim 6 of the instant application, but does not claim that the high temperature foil comprises a nickel-based alloy.

Craig 4,501,053 (figures 3 and 5) shows a turbine blade having a shell 34 in the form of a nickel-base alloy (see column 6, lines 5-17), for the purpose of providing the turbine blade with good resistance to corrosion.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the high temperature foil of claim 3 of U.S. Patent 6,551,503 such that it is made of a nickel-base alloy, as taught by Craig, for the purpose of providing good resistance to corrosion.

Allowable Subject Matter

Claims 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (703)-308-2638. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (703) 308-1044. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

Christopher Verdier
Primary Examiner
Art Unit 3745

C.V.
June 5, 2003